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Juergen Frosien

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EXAMINER

CHANG, HANWAY

ART UNIT

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4183

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,206	Applicant(s) FROSIEN, JUERGEN	
	Examiner Hanway Chang	Art Unit 4183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 15-19 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/04/2006, 06/27/2006, 01/26/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

On page 16, line 34 the specification recites "nut 51". It is suggested to amend the specification to read "nut 52" as previously cited as reference number 51 refers to setscrews also previously mentioned.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

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the invention. The claim recites “wherein the first distance piece **or** the second distance piece are **each** three distance pieces.” (emphasis added). The limitation “each” implies both distance pieces are three distance pieces while the claim is written in the alternative. It is suggested that the word “each” is removed.

Claims 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 14-16 each recites the limitation "second holding piece" in the second line of the respective claims. There is insufficient antecedent basis for this limitation in the claim.

Further regarding claim 14, the limitation “second holding piece” is also mentioned in the sixth line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claims 17 and 18 both recite the limitation "or third elements" in the second line of the respective claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuno (US Pat. 4,450,357, hereinafter Tsuno).

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Regarding claims 1 and 19, Fig. 1 of Tsuno discloses a beam optical component for acting on a charged particle beam comprising a first element (7) having a first opening (d1) for acting on the charged particle beam (see col. 1, lines 31-37); at least one second element (8) for acting on the charged particle beam (see col. 1, lines 23-31), a first distance piece (10) positioned between the first element (7) and the at least one second element (8) to provide for a minimum distance between the first element (7) and the second element (8); and a first holding piece (4) for abutting the first element (7) to the first distance piece (10), wherein the first holding piece (4) is attached to the first distance piece (10) (see col. 1, lines 18-26). It should be noted that the device of Tsuno is an electron lens which is used to act upon electrons, which are charged particles. It should be further noted that the first holding piece (4) is abutting the first element (7) and is attached to the first distance piece (10) through the first element (7).

Regarding claims 2 and 3, Fig. 1 of Tsuno discloses a second holding piece (5) for abutting the second element (8) to the first distance piece (10) (see col. 1, lines 18-23). It should be noted that the second holding piece (5) is abutting the second element (8) through the first holding piece and is attached to the first distance piece (10) through the second element (8).

Regarding claim 4, Fig. 1 of Tsuno discloses the at least one second element (8) has a first structured portion (d2) to be aligned to the first opening (S1) (see col. 1, lines 31-37).

Regarding claim 5, Fig. 1 of Tsuno discloses the first structured portion is a second opening (d2) to act on the charged particle beam (see col. 1, lines 31-37).

Regarding claim 6, Fig. 1 of Tsuno discloses a third element (9) having a second structure portion (d3) to be aligned to the first opening (d1) (see col. 1, lines 31-37).

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Regarding claim 7, Fig. 1 of Tsuno discloses the second structured portion is a third opening (d3) to act on the charged particle beam (see col. 1, lines 31-37).

Regarding claim 18, Fig. 1 of Tsuno discloses the first element (7) and second element (8) are pole pieces (see col. 1, lines 23-26).

Claims 1, 8-12, 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Robinson et al. (US Pat. 2,581,446, hereinafter Robinson).

Regarding claim 1, Fig. 2 of Robinson discloses a first element (29) (see col. 4, lines 34-40) having a first opening (27B) for acting on the charged particle beam (see col. 4, lines 54-59); at least one second element (28) (see col. 4, lines 34-40) for acting on the charged particle beam; a first distance piece (54/55) positioned between the first element (29) and the at least one second element (28) to provide for a minimum distance between the first element (29) and the second element (28) (see col. 5, lines 26-35); and a first holding piece (65) for abutting the first element (29) to the first distance piece (54/55) wherein the first holding piece (65) is attached to the first distance piece (54/55) (see col. 5, lines 59-67). It should be noted that the first holding piece is attached to the first distance piece through the first element and second element.

Regarding claim 17, Fig. 2 of Robinson discloses the first element (29) and second element (28) are electrodes (see col. 4, lines 34-40).

Regarding claim 8, Fig. 2 of Robinson discloses a beam optical component comprising a first element (24) (see col. 4, lines 34-40) having a first opening (27) for acting on the charged particle beam. It should be noted that the conductive plate (24) acts upon the charged particle beam by creating the initial potential difference to propel the charged particles out from the

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source (see col. 4, lines 50-58). Fig. 2 of Robinson further discloses at least one second element (28) (see col. 4, lines 34-40) for acting on said charged particle beam (see col. 4, lines 50-58); a first distance piece (44) (see col. 2, lines 46-12) positioned between the first element (24) and the at least one second element (28) to provide for a minimum distance between the first element (24) and the second element (28); a first holding piece (64) (see col. 5, lines 59-67) for abutting the first element (24) to the first distance piece (44), wherein the first holding piece (64) is attached to the first distance piece (44). It should be noted that the first holding piece (64) is not directly connected to the first distance piece (44), but is connected through the first element (24) and the second element (28). Fig. 2 of Robinson further discloses a third element (29) (see col. 4, lines 34-40) having a second structured portion (27A) to be aligned to the first opening. Robinson further discloses a second distance piece (60/61) to define a minimum distance between the second element (28) and the third element (29) (see col. 5, lines 50-53).

Regarding claim 9, Fig. 2 of Robinson discloses a third holding piece (65) (see col. 5, lines 59-67) for abutting the second element (28) to the second distance piece (60/61).

Regarding claim 10, Fig. 2 of Robinson discloses a fourth holding piece (54/55) (see col. 5, lines 26-32) for abutting the third element (29) to the second distance piece (60/61).

Regarding claim 11, Robinson teaches that although the drawings only show the distance pieces being two pieces, 3 or more distance pieces are required. (see col. 5, lines 53-58).

Regarding claim 12, Fig. 2 of Robinson discloses the first distance piece (44) is spherically shaped (see col. 5, lines 19-23).

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Regarding claim 15, Fig. 2 of Robinson discloses the first distance piece (64) comprises respective nuts (67) (see col. 5, lines 63-67) for abutting the respective electrode to the respective distance piece.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson in view of Benveniste (US PGPub 2005/0242293, hereinafter Benveniste).

Regarding claim 16, a difference between Robinson and the claimed invention is the first holding piece comprises springs for abutting the respective first element to the first or second distance piece at predetermined pressures. However, in the same field of endeavor, Fig. 1 of Benveniste discloses a solution to abut electrodes to spherically shaped distance pieces. Benveniste discloses the use of spring-loaded screws (not shown) to attach ceramic balls (9) to electrodes (8a-8d) to maintain a minimum distance between the electrodes (see paragraph [0011]). Benveniste teaches that using spring-loaded screws permits slight movement of the electrodes with respect to each other. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Robinson by using spring-loaded screws to attach the electrodes and distance pieces together for the purpose of forming the device while permitting slight movement of the electrodes for small adjustments. It

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should be noted that any pressure from the spring-loaded screws used to hold the electrodes and distance pieces is the predetermined pressure.

Allowable Subject Matter

Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 13, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including, the first distance piece or second distance piece are spherically shaped bodies having at least one waist to reduce the lateral extension of the sphere.

Regarding claim 14, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including, the first holding piece or third holding piece is inserted into the respective distance piece.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanway Chang whose telephone number is (571)270-5766. The examiner can normally be reached on Monday to Thursday 7:30 AM till 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Landau can be reached on (571)272-1731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C. Landau/
Supervisory Patent Examiner, Art Unit
4183

Hanway Chang
February 10, 2009
/H. C./
Examiner, Art Unit 4183